FIG. 1

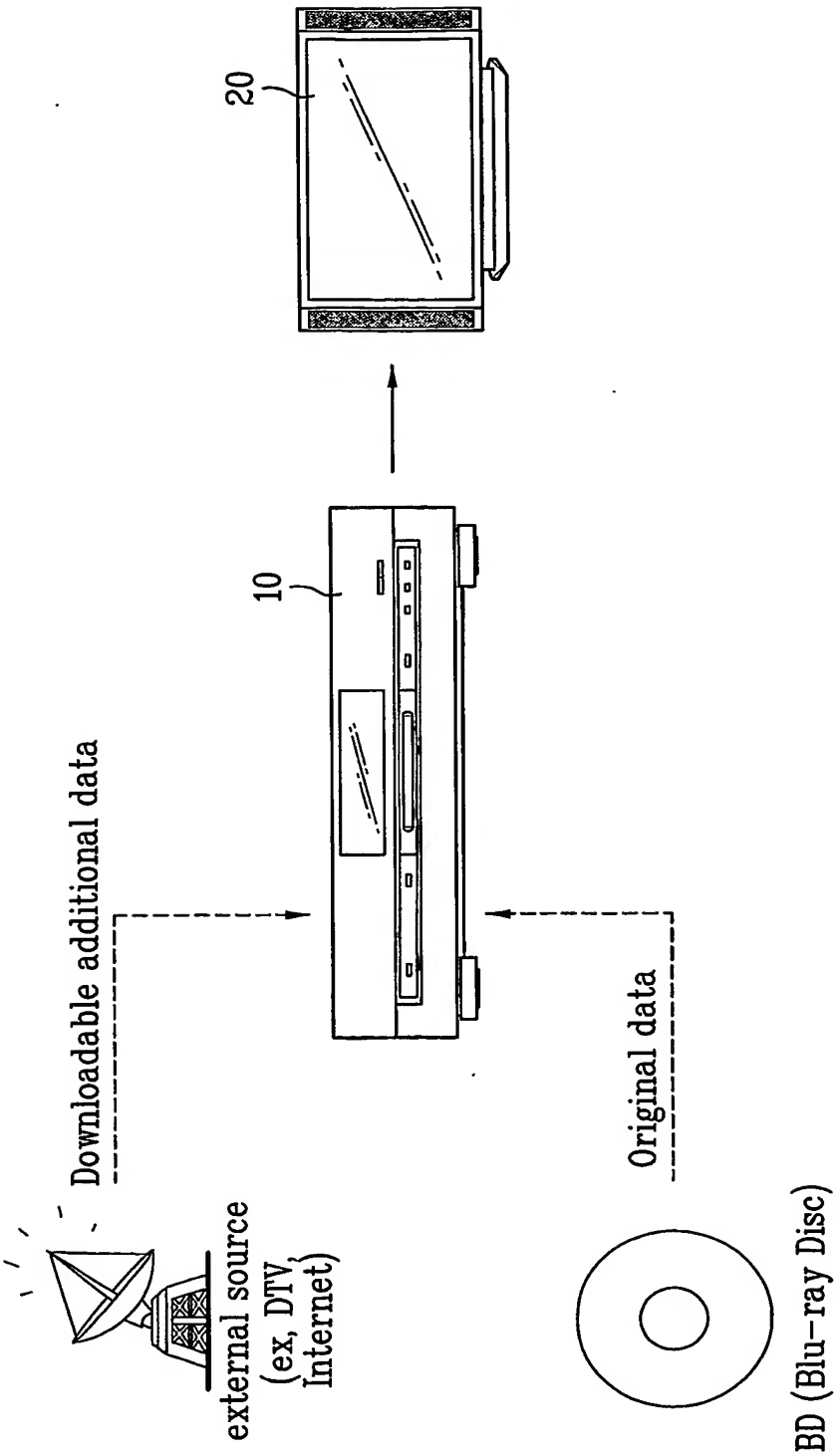

20
10
Downloadable additional data
external source
(ex, DTV, Internet)
Original data
BD (Blu-ray Disc)

FIG. 2

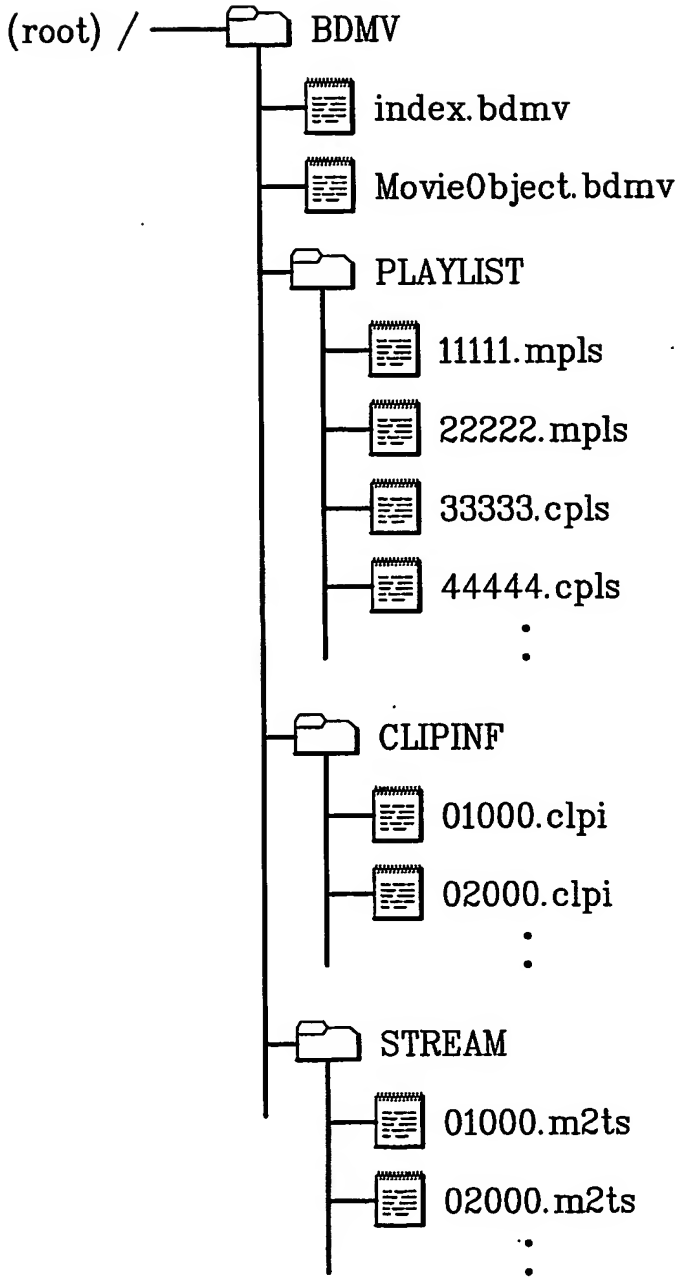

(root) /
BDMV
index.bdmv
MovieObject.bdmv
PLAYLIST
11111.mpls
22222.mpls
33333.cpls
44444.cpls
CLIPINF
01000.clpi
02000.clpi
STREAM
01000.m2ts
02000.m2ts

FIG. 3A

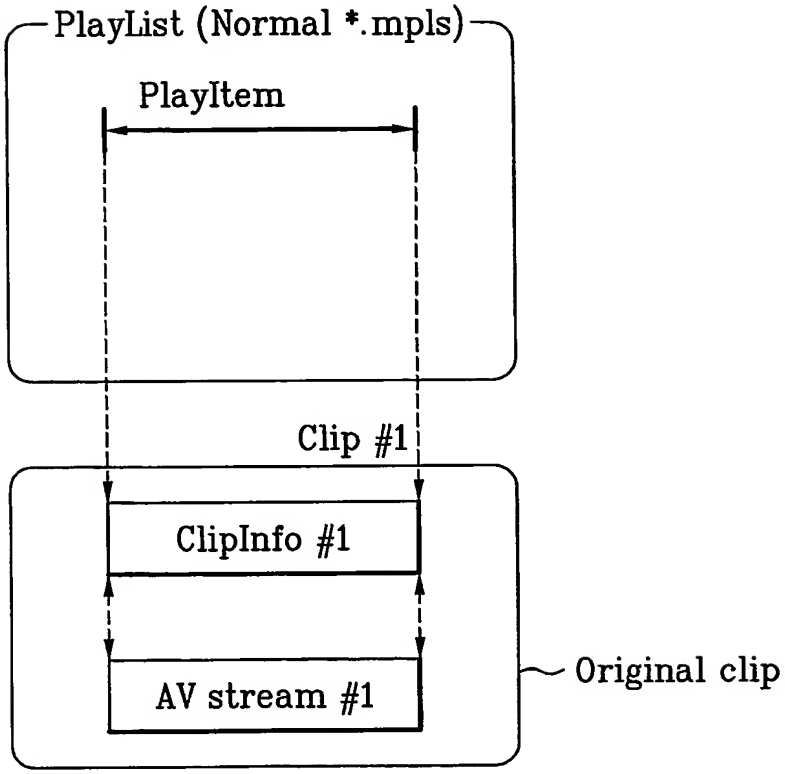

PlayList (Normal *.mpls)
PlayItem
Clip #1
ClipInfo #1
AV stream #1
Original clip

FIG. 3B

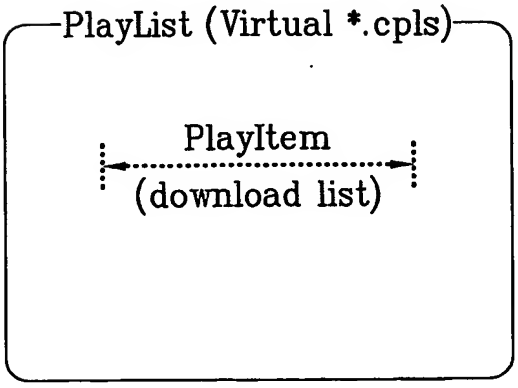

PlayList (Virtual *.cpls)
PlayItem
(download list)

FIG. 3C

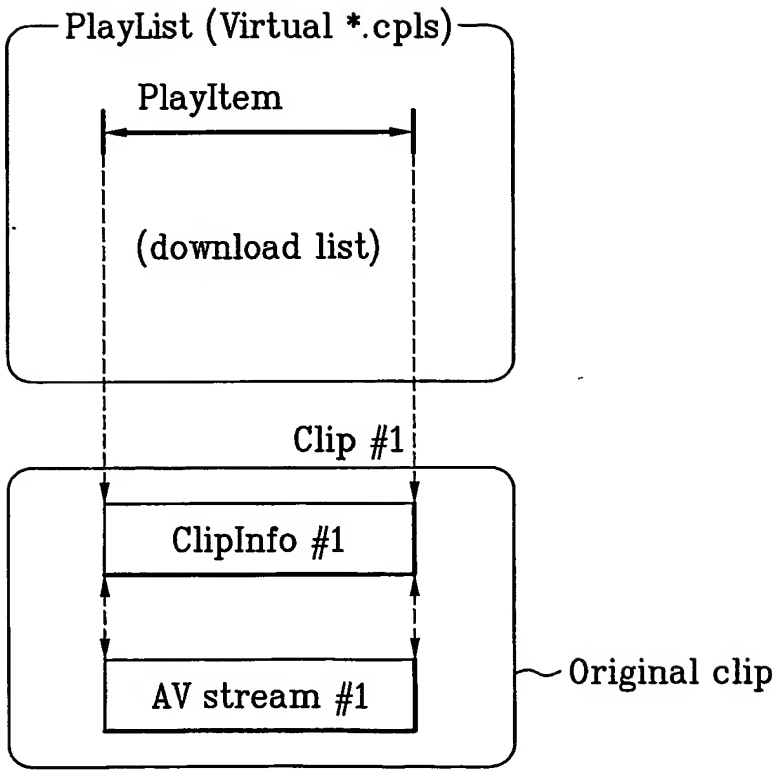

PlayList (Virtual *.cpls)
PlayItem
(download list)
Clip #1
ClipInfo #1
AV stream #1
Original clip

FIG. 3D

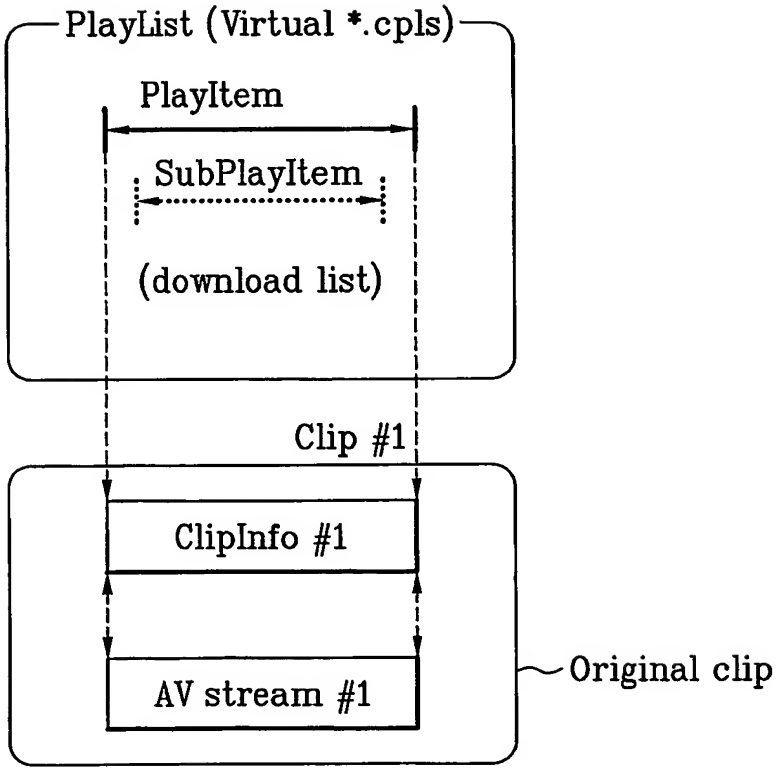

PlayList (Virtual *.cpls)
PlayItem
SubPlayItem
(download list)
Clip #1
ClipInfo #1
AV stream #1
Original clip

FIG. 4

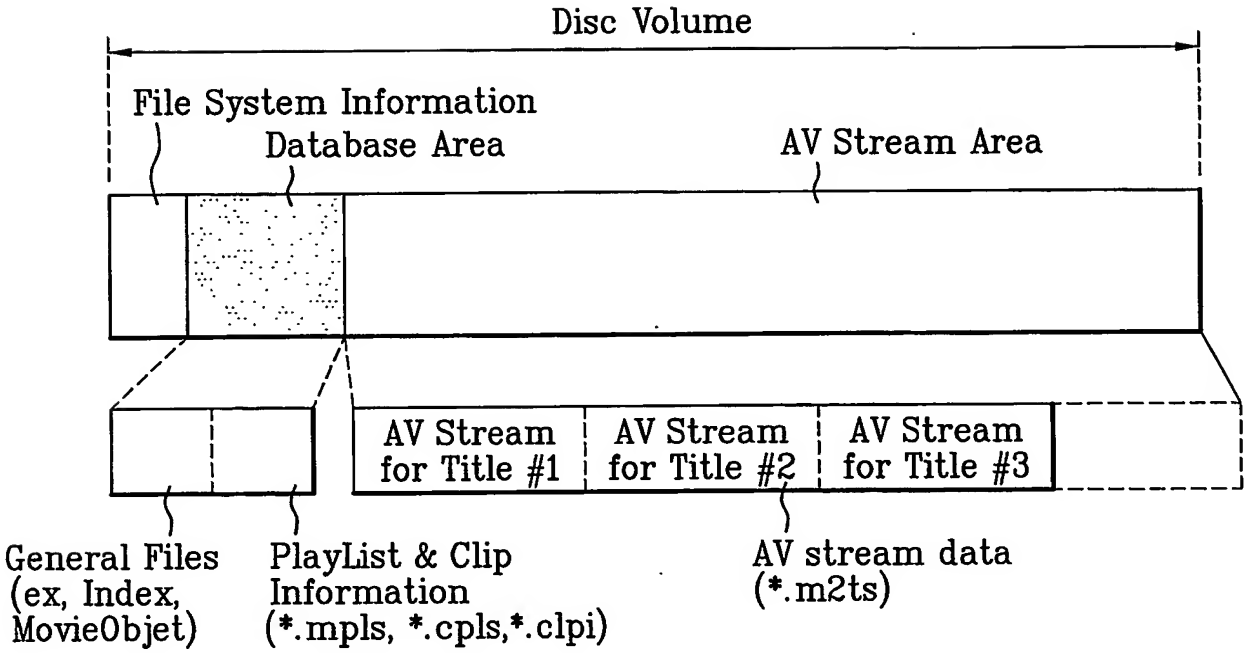

Disc Volume
File System Information
Database Area
AV Stream Area
AV Stream for Title #1
AV Stream for Title #2
AV Stream for Title #3
General Files (ex, Index, MovieObjet)
PlayList & Clip Information (*.mpls, *.cpls,*.clpi)
AV stream data (*.m2ts)

FIG. 5A

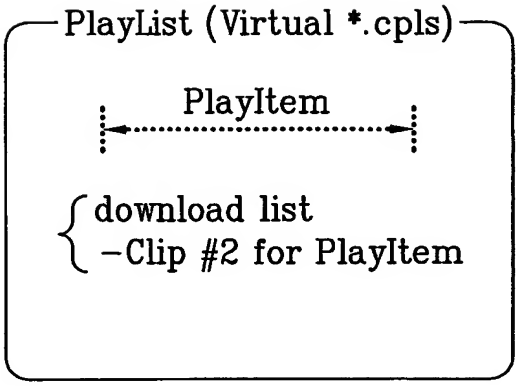

PlayList (Virtual *.cpls)
PlayItem
download list
-Clip #2 for PlayItem

FIG. 5B

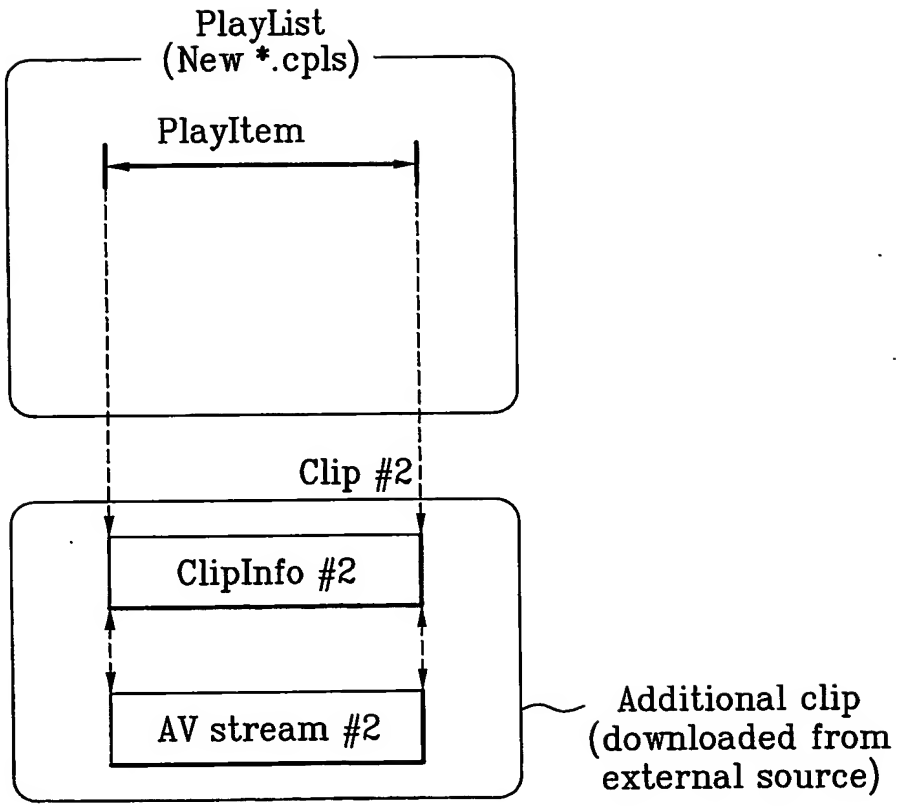

PlayList
(New *.cpls)
PlayItem
Clip #2
ClipInfo #2
AV stream #2
Additional clip
(downloaded from
external source)

FIG. 6A

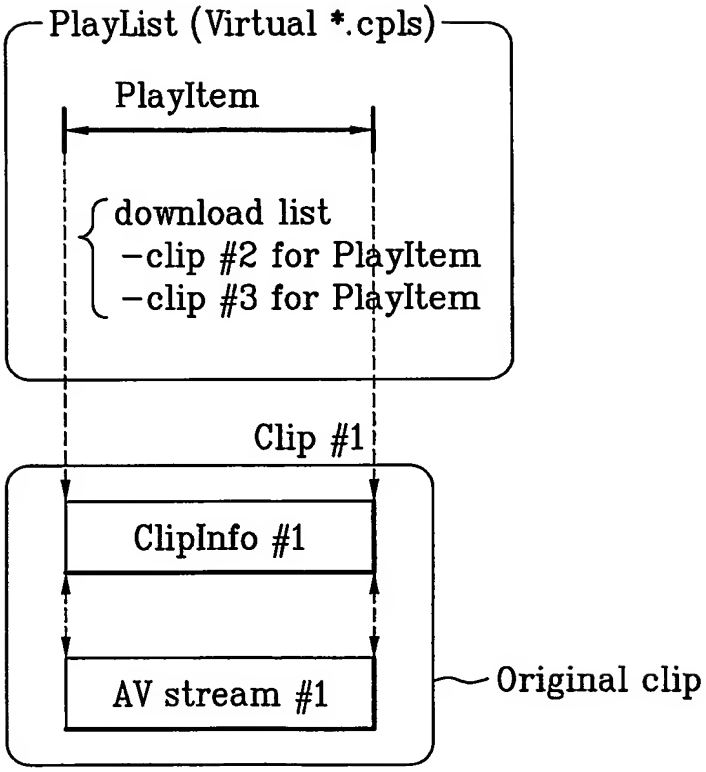

PlayList (Virtual *.cpls)
PlayItem
download list
-clip #2 for PlayItem
-clip #3 for PlayItem
Clip #1
ClipInfo #1
AV stream #1
Original clip

FIG. 6B

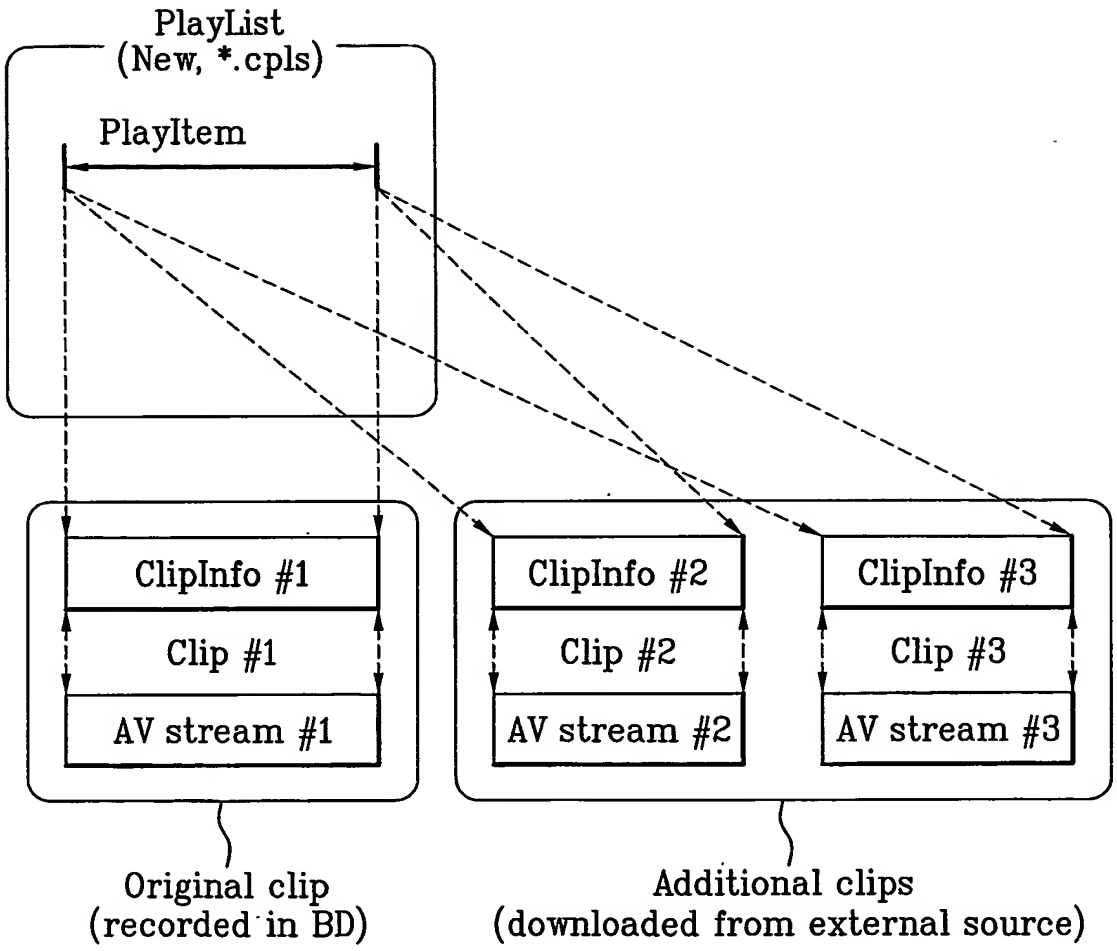

PlayList
(New, *.cpls)
PlayItem
ClipInfo #1
Clip #1
AV stream #1
ClipInfo #2
Clip #2
AV stream #2
ClipInfo #3
Clip #3
AV stream #3
Original clip
(recorded in BD)
Additional clips
(downloaded from external source)

FIG. 7A

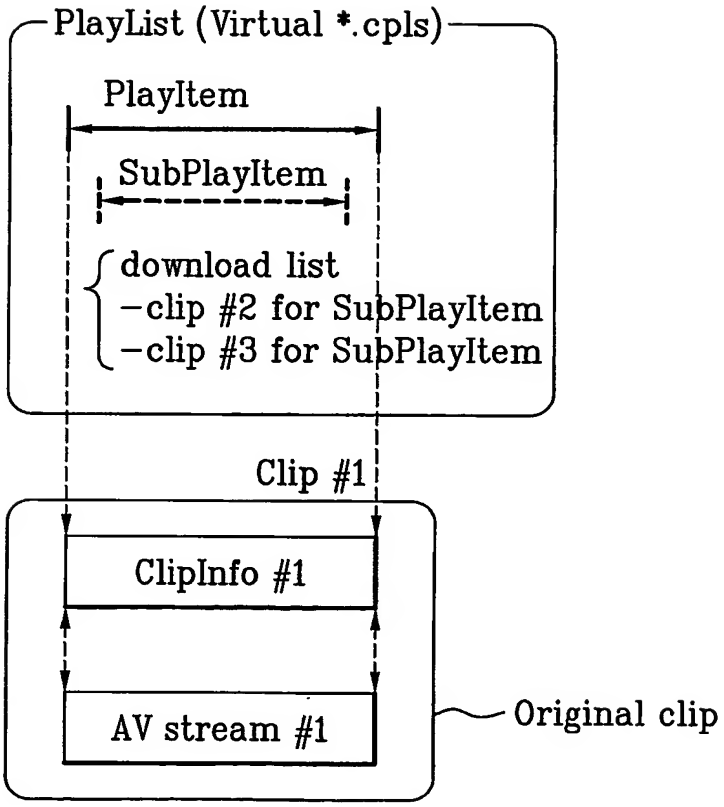

PlayList (Virtual *.cpls)
PlayItem
SubPlayItem
download list
-clip #2 for SubPlayItem
-clip #3 for SubPlayItem
Clip #1
ClipInfo #1
AV stream #1
Original clip

FIG. 7B

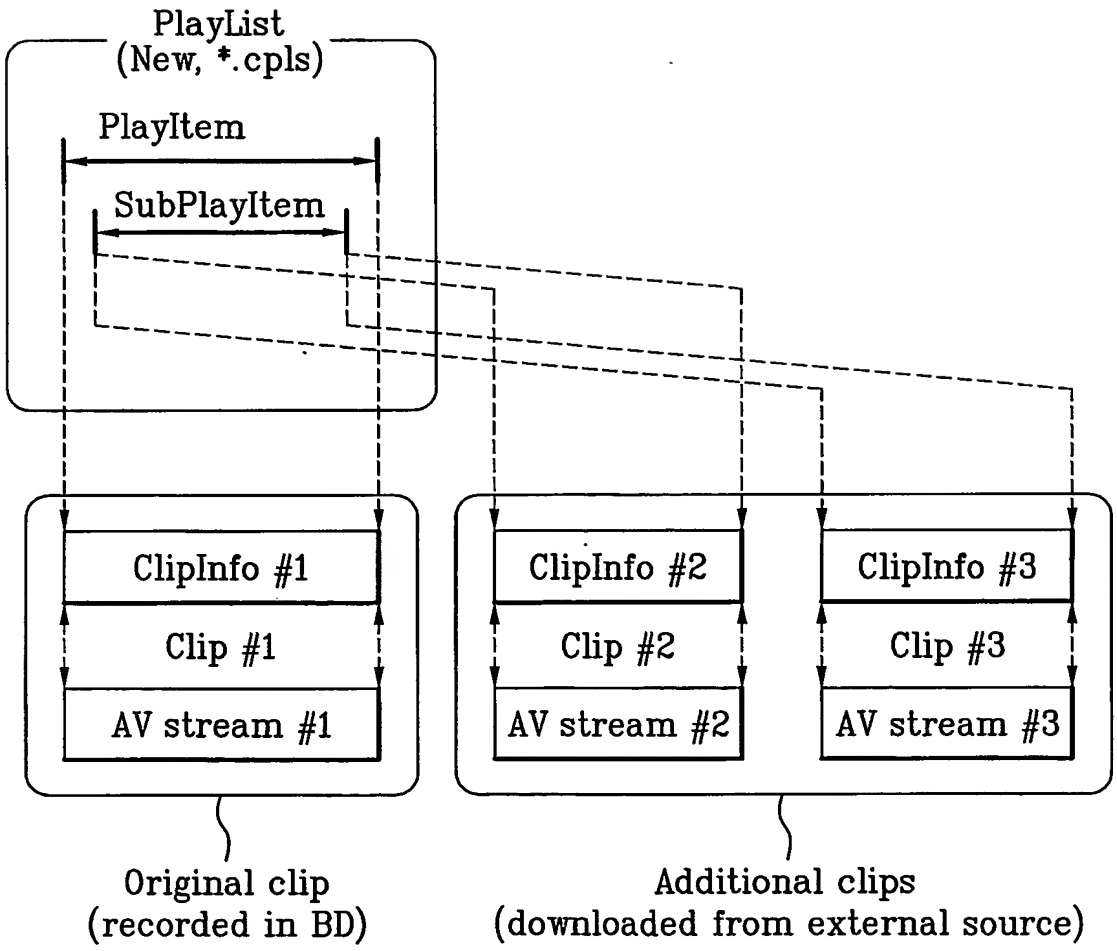

PlayList
(New, *.cpls)
PlayItem
SubPlayItem
ClipInfo #1
Clip #1
AV stream #1
ClipInfo #2
Clip #2
AV stream #2
ClipInfo #3
Clip #3
AV stream #3
Original clip
(recorded in BD)
Additional clips
(downloaded from external source)

FIG. 8A

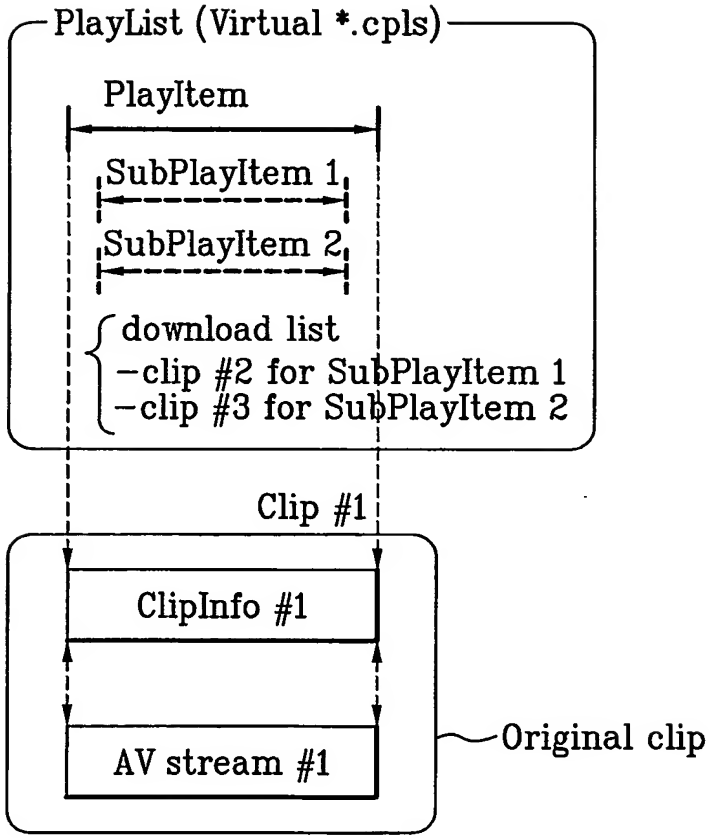

PlayList (Virtual *.cpls)
PlayItem
SubPlayItem 1
SubPlayItem 2
download list
-clip #2 for SubPlayItem 1
-clip #3 for SubPlayItem 2
Clip #1
ClipInfo #1
AV stream #1
Original clip

FIG. 8B

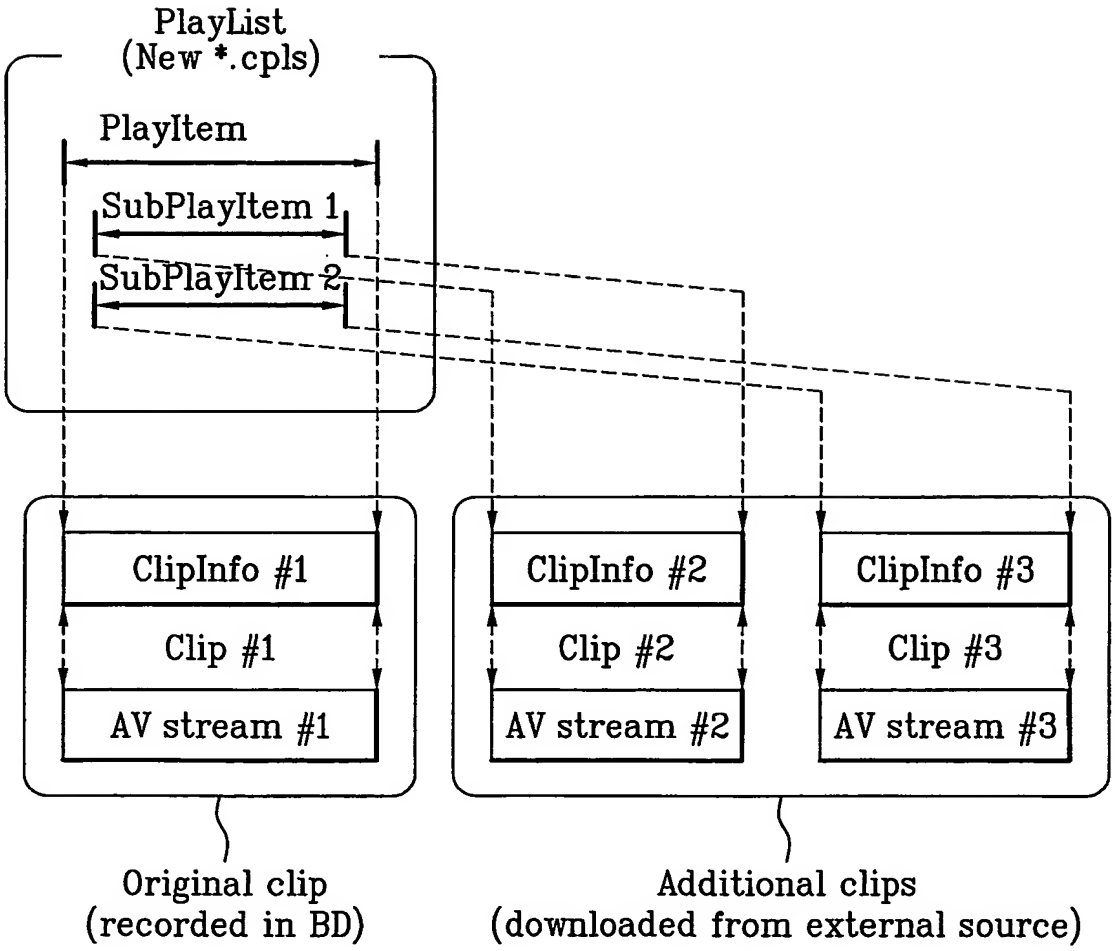

PlayList
(New *.cpls)
PlayItem
SubPlayItem 1
SubPlayItem 2
ClipInfo #1
Clip #1
AV stream #1
ClipInfo #2
Clip #2
AV stream #2
ClipInfo #3
Clip #3
AV stream #3
Original clip
(recorded in BD)
Additional clips
(downloaded from external source)

FIG. 9

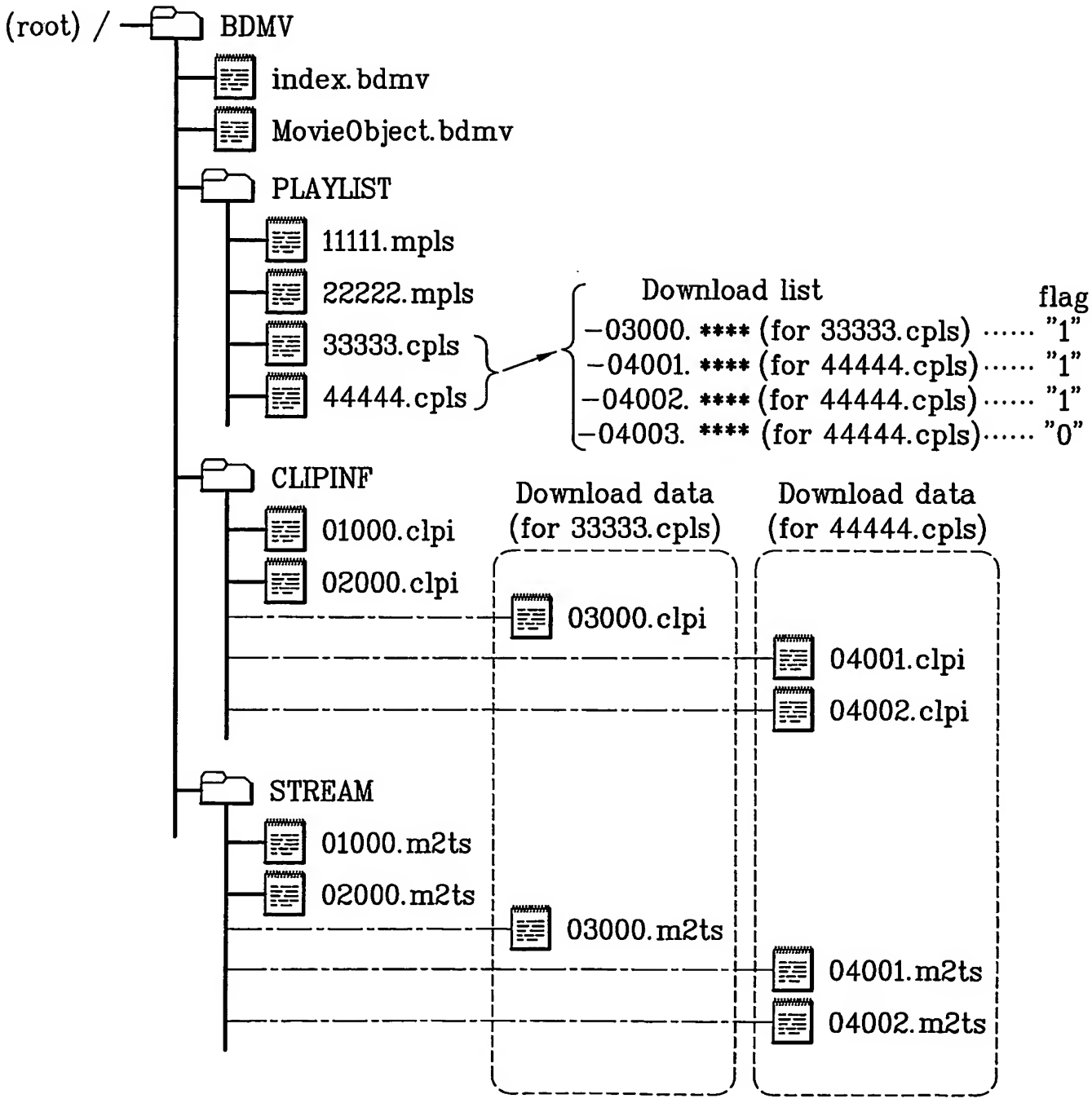

(root) /
BDMV
index.bdmv
MovieObject.bdmv
PLAYLIST
11111.mpls
22222.mpls
33333.cpls
44444.cpls
Download list
flag
-03000. **** (for 33333.cpls) ..... "1"
-04001. **** (for 44444.cpls) ..... "1"
-04002. **** (for 44444.cpls) ..... "1"
-04003. **** (for 44444.cpls) ..... "0"
CLIPINF
01000.clpi
02000.clpi
Download data (for 33333.cpls)
Download data (for 44444.cpls)
03000.clpi
04001.clpi
04002.clpi
STREAM
01000.m2ts
02000.m2ts
03000.m2ts
04001.m2ts
04002.m2ts

FIG. 10A

```
PID_Table () {
   length
   number_of_PID_entries
   for (k=0: k< number_of_PID_entries: k++) {
      ref_to_stream_PID(k)
      attributes
      sub_PlayItem_num
      }
}
```

FIG. 10B

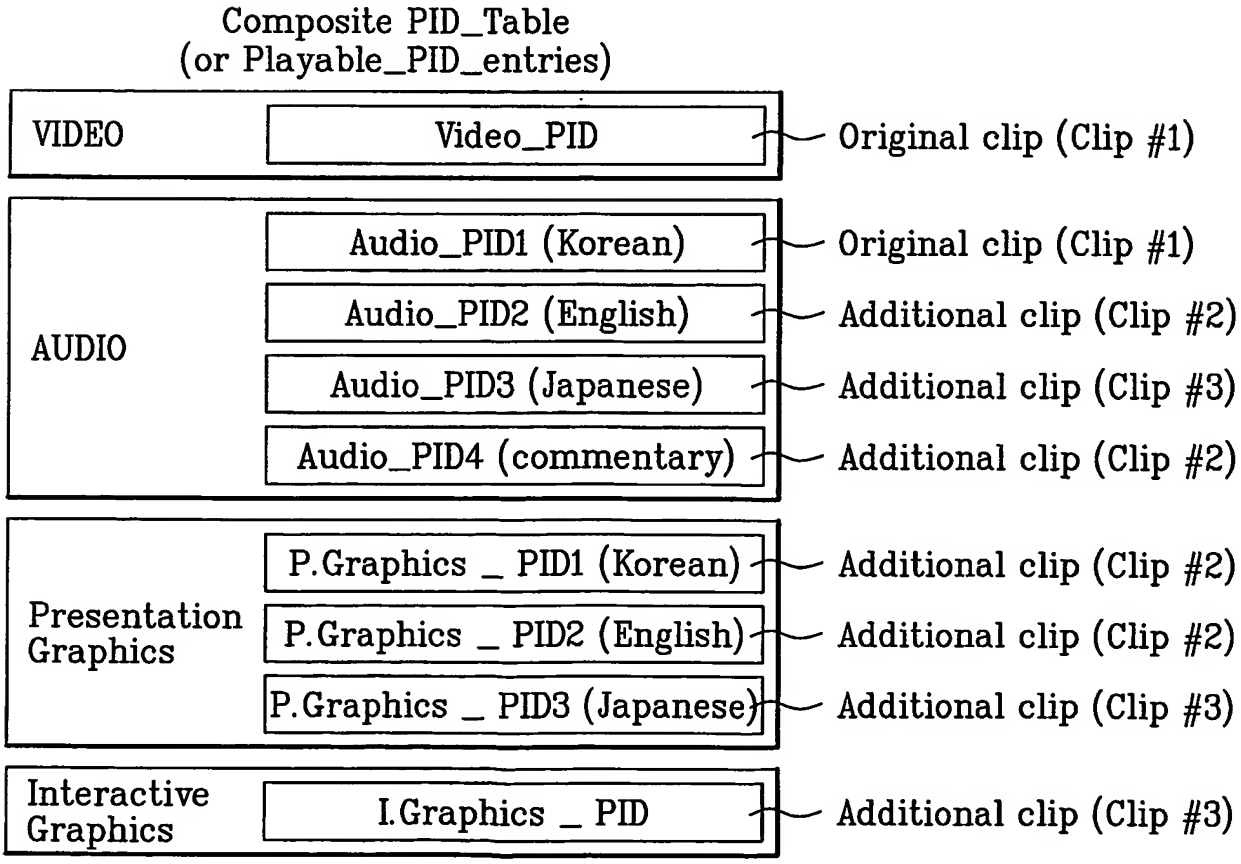


FIG. 10C

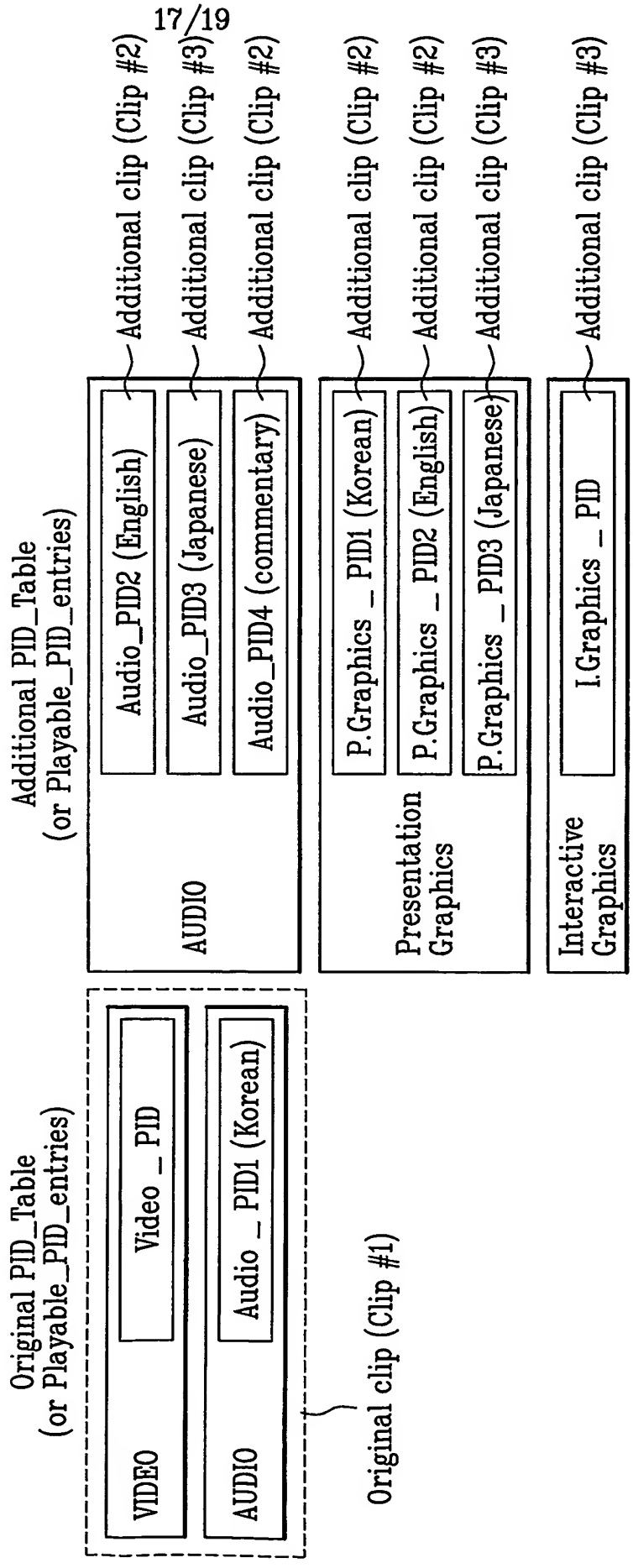

Original PID_Table
(or Playable_PID_entries)
VIDEO
Video _ PID
AUDIO
Audio _ PID1 (Korean)
Original clip (Clip #1)
Additional PID_Table
(or Playable_PID_entries)
AUDIO
Audio_PID2 (English)
Audio_PID3 (Japanese)
Audio_PID4 (commentary)
Additional clip (Clip #2)
Additional clip (Clip #3)
Additional clip (Clip #2)
Presentation Graphics
P.Graphics _ PID1 (Korean)
P.Graphics _ PID2 (English)
P.Graphics _ PID3 (Japanese)
Additional clip (Clip #2)
Additional clip (Clip #2)
Additional clip (Clip #3)
Interactive Graphics
I.Graphics _ PID
Additional clip (Clip #3)

FIG. 11

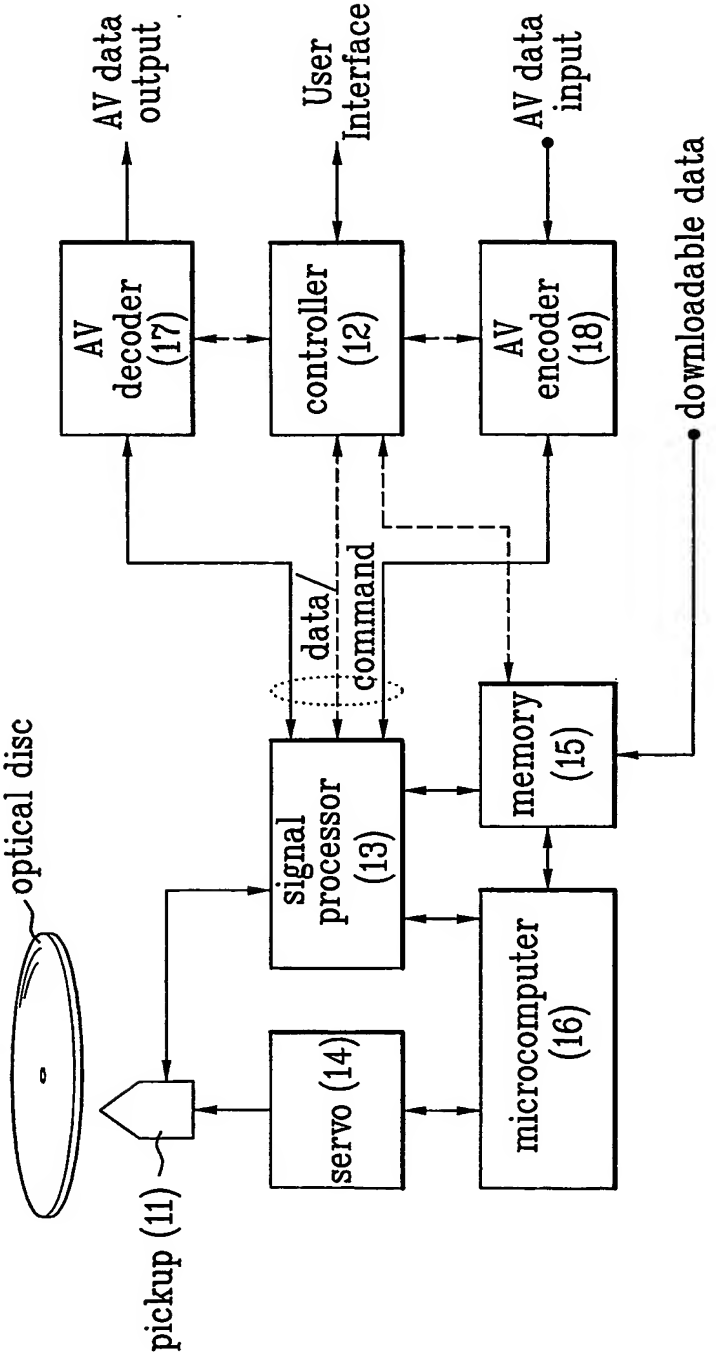
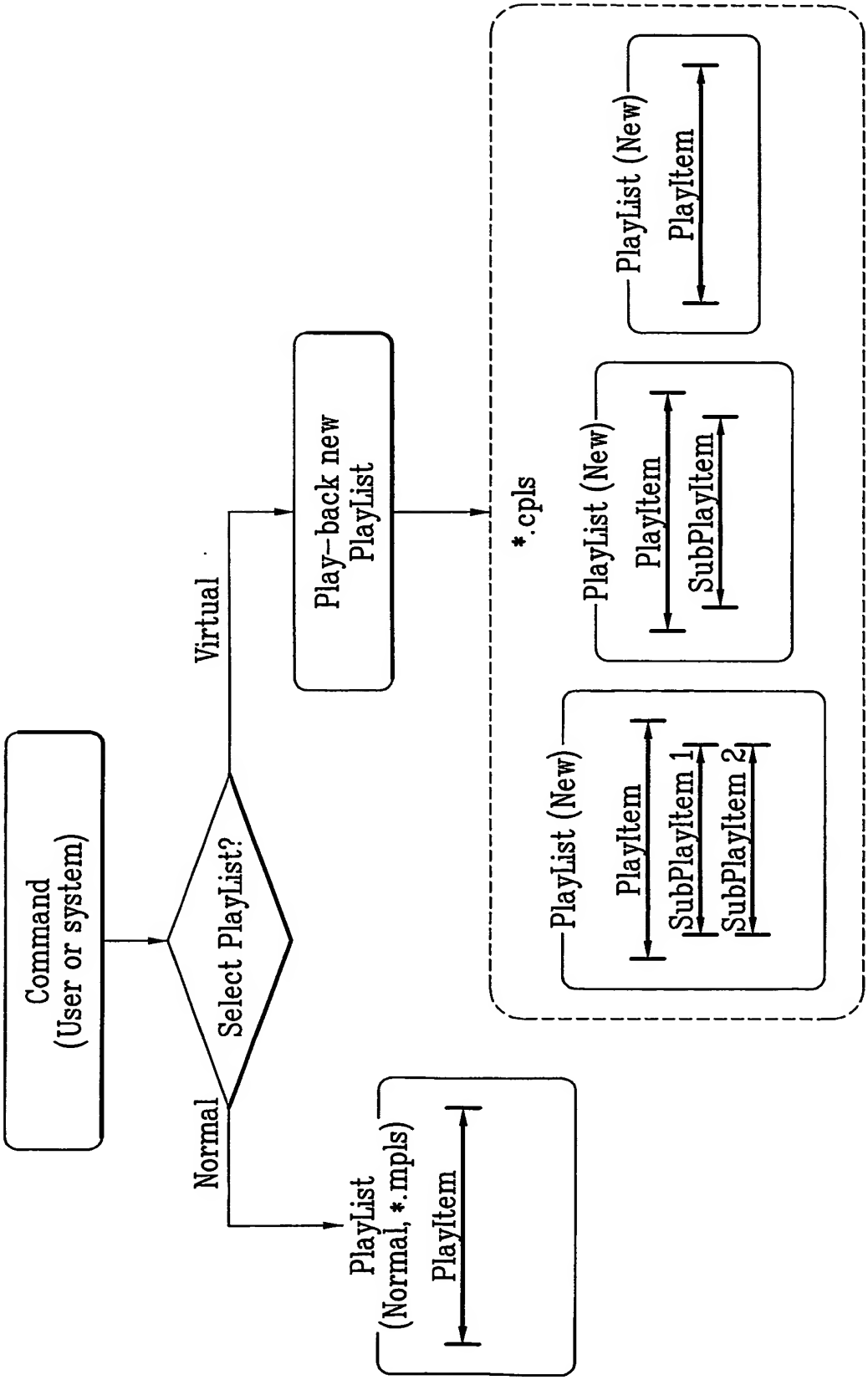

AV data output
User Interface
AV data input
AV decoder (17)
controller (12)
AV encoder (18)
downloadable data
data/command
optical disc
signal processor (13)
memory (15)
servo (14)
microcomputer (16)
pickup (11)

FIG. 12


Command
(User or system)
Select PlayList?
Virtual
Normal
Play-back new
PlayList
PlayList
(Normal, *.mpls)
PlayItem
*.cpls
PlayList (New)
PlayItem
PlayList (New)
PlayItem
SubPlayItem
PlayList (New)
PlayItem
SubPlayItem 1
SubPlayItem 2